



# Launch Mission Execution Forecast



**Mission:** Falcon 9 Starlink 4-21

**Issued:** 5 July 2022 / 0730L (1130Z)

**Valid:** 7 July 2022 / 0901-1041L (1301–1441Z)

**Forecast Discussion:** The subtropical ridge axis will remain north of the Spaceport today, keeping the prevailing flow from the southeast. This will lower the chances of afternoon and evening thunderstorms along the Space Coast as the storms will rapidly move inland with the sea breeze. Tomorrow and Thursday the ridge axis will migrate south in response to a weak low pressure area developing along the Eastern Seaboard. This will create southerly flow over the Spaceport, increasing the chances of early afternoon thunderstorms until the sea breeze slowly moves inland. The primary weather concern for a launch attempt Thursday is the Cumulus Cloud Rule associated with the sea breeze.

On Friday, the low pressure area will dissipate and the ridge axis will move back north of the Space Coast. This will create southeasterly flow and allow the sea breeze to push inland quickly, lowering the threat of thunderstorms over the Spaceport. The primary weather concern for a launch attempt Friday morning remains the Cumulus Cloud Rule.

Launch Day	Probability of Violating Weather Constraints <sup>1</sup>					
	<b>20%</b>	Primary Concerns: Cumulus Cloud Rule				
	Weather Conditions				Additional Risk Criteria <sup>2</sup>	
	<b>Weather/Visibility:</b> None / 7 mi.	<b>Clouds</b>			<b>Upper-Level Wind Shear:</b> Low	
<b>Temp/Humidity:</b> 82°F / 72%	Type	Coverage	Base (ft)	Tops (ft)	<b>Booster Recovery Weather:</b> Low-Mod	
<b>Liftoff Winds (200'):</b> 190° 8 – 12 mph	Cumulus	Scattered	3,000	10,000	<b>Solar Activity:</b> Low	
24-Hour Delay	Probability of Violating Weather Constraints					
	<b>10%</b>	Primary Concerns: Cumulus Cloud Rule				
	Weather Conditions				Additional Risk Criteria	
	<b>Weather/Visibility:</b> None / 7 mi.	<b>Clouds</b>			<b>Upper-Level Wind Shear:</b> Low	
<b>Temp/Humidity:</b> 82°F / 72%	Type	Coverage	Base (ft)	Tops (ft)	<b>Booster Recovery Weather:</b> Moderate	
<b>Liftoff Winds (200'):</b> 150° 10 - 15 mph	Cumulus	Few	3,000	10,000	<b>Solar Activity:</b> Low	
Notes	1. The Probability of Violation (PoV) is the chance of a local safety or customer constraint violation occurring anytime during the launch window. 2. Additional Risk Criteria, which are not included in the PoV, are mission-specific constraints that may not include all phenomena within each risk factor.					
	See <a href="https://www.patrick.spaceforce.mil/Portals/14/Weather/LaunchFAQ.pdf">https://www.patrick.spaceforce.mil/Portals/14/Weather/LaunchFAQ.pdf</a> for more information					
<b>Next Forecast Will Be Issued</b>		6 July 2022				